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Differential Agent Marking and animacy

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ABSTRACT

This paper investigates the cross-linguistic effects of animacy on overt Agent marking on the basis of a 200-language sample. It is shown that animacy-driven Differential Agent Marking (DAM), with different case markers for animate and inanimate Agents, is typologically rather uncommon. In order to account for this type of DAM and its scarcity, it is argued that a related phenomenon needs to be taken into consideration: in a considerable number of languages, inanimates cannot be construed as the Agent of a transitive clause. In this paper, both animacy-driven DAM and this restriction against inanimate Agents are explained using the notion of unexpectedness. Inanimates are unexpected to occur as Agents because they are not readily associated with Agent semantics. Because of this unexpectedness, inanimate Agents can either be avoided, or they can receive special case marking (i.e. DAM). Since the first strategy is preferred, this explains why animacy-driven DAM is not very common. Finally, it is argued that the results of this study are also relevant from a broader theoretical perspective. They reveal both symmetries and asymmetries between the Agent role and the Object role, and they point out a number of problems with the Silverstein hierarchy.

1. Introduction

While the phenomenon of the so-called Differential Object Marking (DOM) is widely attested and relatively well-described (see e.g. Bossong, 1985; Aissen, 2003; Næss, 2004), much less is known about the reverse phenomenon at the other end of the causal chain, i.e. differential case marking for Agents.[1] This paper uses a large cross-linguistic sample to investigate whether there is a cross-linguistic phenomenon of "Differential Agent Marking" that is similar to DOM. More specifically, I will examine those types of DAM that are governed by animacy, since this is one of the features that is cross-linguistically very often involved in DOM effects, as illustrated in example (1), from Malayalam.[2]

MALAYALAM (Asher and Kumari, 1997)

(1) a. *avan kuṭṭi-ye aṭiccu*
he child-ACC beat.PST
'He beat the child'

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[1] Following Dixon (1994), I make a three-way distinction between A (transitive Subject), O (transitive Object) and S (intransitive Subject). In this paper, "Agent" refers to the participant in A function; my use of the term can be compared with the Actor macrorole used by Van Valin (2005).

[2] Where necessary, I have changed the original glosses to comply with the Leipzig Glossing Rules (see http://www.eva.mpg.de/lingua/resources/glossing-rules.php). Abbreviations not in the Leipzig Glossing Rules are: AN, animate; INAN, inanimate and INV, inverse.

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b. *avan pustakam vaayiccu*
he book read.PST
'He read the book'

In (1a), the Object "child" has accusative case marking (the suffix *-e*, here realized as *-ye*), whereas this overt marking is absent in (1b): the inanimate Object "book" is zero-marked. This type of contrast between zero and overt marking, which depends on the animacy of the Object referent, is labeled as DOM. A number of scholars have tried to account for this phenomenon on the basis of the discriminating function of case marking (see e.g. Comrie, 1989; Croft, 1988; Aissen, 2003, inspired by Silverstein, 1976). In this approach, case marking is used to distinguish between Agents and Objects in cases of potential ambiguity. Since Agents and Objects are normally maximally differentiated, ambiguity might arise when Objects have features that are typically associated with Agents (and vice versa). Whereas Agents are taken to be typically high in prominence, Objects are typically low in prominence. This concept of prominence correlates with animacy: Agents are typically high in animacy, whereas Objects are typically low in animacy. Animate Objects are thus atypical in that they have an Agent-like feature, which makes it more difficult to distinguish them from the Agent of the clause. As a result, the animate Object receives overt case marking (as in (1a)) in order to clearly identify it as an Object. In the case of inanimate Objects (as in (1b)), however, the case marker is not needed as there is no risk of confusion with the Agent. Animacy is thus a feature that indicates prominence. Another feature that correlates with prominence is definiteness: the typical Object is not only low in animacy, but also low in definiteness. This implies that definite Objects are atypically high in prominence, and as a result they should also be more likely to receive overt case marking.

Although this type of account was primarily designed with DOM in mind, it also makes predictions about the existence of DAM. According to the principle of "markedness reversal" (what is marked, i.e. atypical, for Agents is unmarked for Objects, and vice versa), the markedness of animate Objects entails the markedness of inanimate Agents. Since inanimate Agents have a feature that is typically associated with Objects, they are less easily identified as Agents. As a result, they should receive overt case marking in order to avoid ambiguity. Thus, this principle predicts that there is a cross-linguistic phenomenon of Differential Agent Marking which is the mirror image of DOM, i.e. with zero marking for animate Agents but overt marking for inanimate ones (see e.g. Aissen, 2003:473). Again, this prediction does not only concern animacy, but also definiteness: like inanimate Agents, indefinite Agents are atypically low in prominence and should be case-marked to avoid ambiguity.

Although this account of DOM and DAM (which I will refer to as the "markedness approach") has been widely adopted, a number of scholars have noted that some of its aspects are problematic. With respect to DOM, Næss (2004) discusses a number of problems associated with the semantic markedness of animate and definite Objects. With respect to DAM, Malchukov (2008) argues that approaches based solely on the discriminating function of case marking do not suffice to capture the cross-linguistic variation in DAM phenomena. Instead, his account combines the discriminating function of case marking with the indexing function, according to which case is used to encode semantic roles. These two different functions of case marking form a set of competing motivations for DAM, which accounts for the diversity of the phenomenon.

In this paper I argue that there are a number of problems with the approaches which were briefly outlined above. Since animacy-related DAM has not been investigated on the basis of a wide cross-linguistic sample, most earlier work discusses a number of individual languages without specifying how widespread the phenomena under discussion actually are. Therefore, I base my findings on data collected from a 200-language sample,[3] which enables me to verify earlier hypotheses and insights on a large scale. The collected data show that there are a number of languages exhibiting animacy-driven DAM, but the phenomenon is much less common than expected under the markedness approach. Moreover, other existing approaches cannot satisfyingly account for the reported data, either. Furthermore, I argue that there is a cross-linguistic phenomenon related to animacy-driven DAM that needs to be taken into consideration. In a considerable number of languages, inanimates cannot be construed as the Agent of a transitive clause. An account of animacy-driven DAM should thus explain the occurrence and relative scarcity of DAM, as well as the occurrence of languages with restrictions on the use of inanimate Agents. The account proposed in this paper is based on the notion of unexpectedness, under which inanimates are atypical Agents because they are not expected to occur in this role. The unexpectedness of inanimate Agents can in some languages result in a pattern of DAM. This, however, is not very often the case because there is another strategy available: since the association between inanimates and the Agent role is so unexpected, inanimate Agents can simply be avoided altogether. This approach thus has the advantage that it uses one single motivation to account for two related phenomena. Moreover, it also explains why DAM is not very common.

This paper is structured as follows. In section 2 I give an overview of the three different types of animacy-related DAM that are found in my sample and I will show that it is an uncommon phenomenon. Moreover, I also discuss the related phenomenon where languages have a restriction against inanimate Agents. In section 3, then, I provide a functional motivation for the data observed in section 2, based on the notion of unexpectedness. In section 4, the results are discussed in terms of their possible theoretical implications. Finally, the conclusions are presented in section 5.

[3] These languages have been chosen in order to guarantee genealogical and areal diversity as much as possible (see Rijkhoff et al., 1993). The full list is included in Appendix A.

Table 1
The three types of DAM attested in the sample.

		Case anim. A	Case inanim. A	Context	Attestations
1.	(a)	Ø	ERG	Transitive	0
	(b)	Ø/ERG	ERG	Transitive	6
2.		ERG_1	ERG_2	Transitive	5
3.		OBL_1	OBL_2	Passive	9

Before going on to the discussion of the collected data, it is necessary to clarify a terminological issue. When discussing the counterpart of DOM, most earlier work uses the term "Differential Subject Marking" (see inter alia Aissen, 2003; Malchukov, 2008 and the recent volume edited by de Hoop and de Swart, 2008), which covers differential case marking for both (intransitive) S and (transitive) A arguments. The notion of "Subject", however, is not unproblematic from a typological point of view, and it is thus not very practical for cross-linguistic investigations (see e.g. Dryer, 1997). Hence I keep the two phenomena apart by making a distinction between "Differential Subject Marking" (DSM, for intransitive Subjects only) and "Differential Agent Marking" (DAM, for transitive Subjects only). Like Comrie (1989), this paper is limited to DAM, for two reasons. First, as DOM is limited to transitive clauses, it seems reasonable to maintain the same restriction when investigating its counterpart. The most accurate counterpart of the Object, which is the terminal point of the causal chain, is the Agent, the starting point of the causal chain. Intransitive Subjects can semantically instantiate either and should be kept apart from these two notions. Second, there are indications that the feature of animacy may be more relevant for Agents than for intransitive Subjects. According to Hopper and Thompson's (1980) transitivity parameters, for instance, inanimate Agents are an indication of low semantic transitivity.

2. Three different types of DAM

In this section I will discuss three different phenomena that can be associated with DAM governed by animacy (see Table 1 for an overview). The first category includes systems where inanimate Agents receive ergative case marking whereas animate ones go unmarked (Ø vs ERG). Although this type of phenomenon has been claimed for a few languages, I will show that it is, in its "pure" form at least, not reliably attested. There are, however, a number of the so-called "optional ergative" languages (see McGregor, 2010) where animacy is one, but not the only feature that plays a role in the use or non-use of the ergative marker. In these languages, inanimate Agents are obligatorily marked by the ergative case marker, whereas this ergative marker is only optional for animates (Ø/ERG vs ERG). The second type of DAM differs from the first one in that the contrast is not between overt and zero marking, but between two different overt markers (ERG_1 vs ERG_2).[4] In languages belonging to the third group, finally, DAM is limited to passive constructions (OBL_1 vs OBL_2). In all these categories, DAM is restricted to differential case marking, since there is only one language with differential head marking in my sample (namely Abui, see section 3.1; for a note on direct/inverse marking, see section 4.2). Apart from the three types of DAM, I also discuss a related phenomenon concerning restrictions on the use of inanimate Agents.

2.1. Ø vs ERG and Ø/ERG vs ERG

The first type of animacy-related DAM belongs to the category of the so-called split ergative systems: Agents may be zero marked or overtly marked, depending on the inherent lexical content of the NP. The cross-linguistic variation in the precise nature of the split is accounted for by the well-known Silverstein hierarchy (Silverstein, 1976), represented in Fig. 1. This hierarchy expresses the "semantic naturalness for a lexically-specified noun phrase to function as Agent of a true transitive verb, and inversely the naturalness of functioning as patient of such" (Silverstein, 1976:113). Naturalness is considered to be in an inverse correlation with overt case marking: the lower an Agent is on the hierarchy, the less natural it is and the more likely to be overtly marked. Since the reverse holds for Objects, this implies that ergative patterning (ERG for A, ABS (Ø) for S and O) is associated with lower referents and accusative patterning (NOM (Ø) for A and S, ACC for O) with higher referents. Case splits, then, may have their cut-off point anywhere along this hierarchy.

Since inanimates are situated at the lower end of the hierarchy, they are the least natural as Agents, and as a result they should be more likely than animates to receive overt Agent marking. It is this work which lies at the basis of the markedness approaches (e.g. Aissen, 2003; Croft, 1988; Comrie, 1989) that were briefly outlined section 1. Although these approaches focus on distinguishability of Agent and Object instead of semantic naturalness, the predictions concerning DAM are similar: there should be case systems with a cut-off point between animates and inanimates, resulting in zero marking for animate Agents and overt marking for inanimate ones. In what follows, however, I will show that there are no unequivocal attestations of this phenomenon in my sample. I will argue that the case system of Mangarayi, Hittite and Lakhota, which have been claimed to exhibit this type of DAM, should be analyzed in a different way.

[4] de Hoop and Malchukov (2007) label alternations between zero and overt case marking as "asymmetric", whereas alternations between two different overt markers are labeled "symmetric".

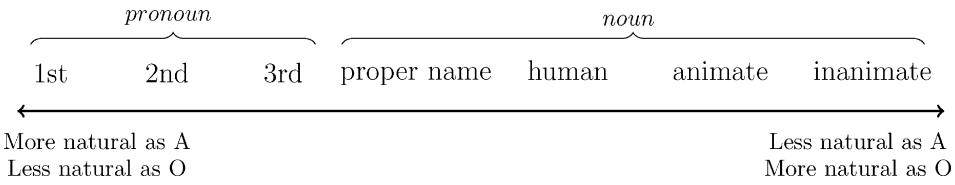

Fig. 1. The Silverstein (1976) hierarchy as represented by Dixon (1994:85).

2.1.1. Mangarayi

The first language to be discussed here is Mangarayi, spoken in Northern Australia. Merlan (1982:56) describes the Mangarayi case system as split ergative, with the cut-off point being situated between animates and inanimates. Moreover, Malchukov (2008:206–207) cites this language as an example of a system where only inanimate Agents take ergative case marking, as opposed to animate Agents which have nominative marking. Mangarayi thus seems a clear case of DAM governed by animacy. However, a closer look at the Mangarayi case system (see Table 2) reveals that this is not entirely accurate. Mangarayi nouns are divided into three groups according to their noun class: masculine, feminine and neuter. The neuter class consists of inanimates and lower animates whereas the masculine and feminine classes are associated with animates. In this sense, the animate–inanimate distinction is embedded in the noun class system of the language (Merlan, 1982:57–58).[5] As shown in Table 2, Mangarayi can be labeled as split ergative from a paradigmatic perspective, i.e. when one looks at the morpho-syntactic alignment, but it shows a different pattern when one considers the actual distribution of zero versus overt case marking. On the one hand, Mangarayi shows a split in its morpho-syntactic alignment: A and S are grouped together for masculines because they are both marked by the "nominative" *rna-* (= accusative alignment), whereas S and O are grouped together for neuters because they are both marked by the absolutive Ø (= ergative alignment). Note, however, that these alignment patterns are not entirely consistent: masculines sometimes show ergative alignment (with Ø for S instead of *rna-*), and neuters sometimes show accusative alignment (with *rna-* for S instead of Ø) (Merlan, 1982, 57). This implies that the split is much less clear-cut than apparent from Table 2.[6] On the other hand, the split in alignment patterns does not imply that there is an identical split between overt and zero case marking. Both the "ergative" case (for neuters) and the "nominative" case (for masculines) are marked by the same prefix *rna-*, whereas both the "accusative" and the "absolutive" are zero-marked. As a result, there is no such thing as DAM in Mangarayi, since both inanimate and animate (masculine) Agents share the same marker. This can be illustrated by example (2): both the animate Agent "father" in (2a) and the inanimate Agent "water" in (2b) are prefixed with *rna-*.

Table 2
Mangarayi split ergativity (Merlan, 1982:56–57).

	A	S	O
Masculine	*rna-*	*rna-*	ø
Neuter	*rna-*	ø	ø
Feminine	*ngaḷa-*	*ngaḷa-*	*ngan-*

MANGARAYI (Merlan, 1982:61)

(2) a. *rna-bada ngan-ga-nginy*
rna-father 3SG>1SG-take-PST
'My father took me'

b. *rna-ngugu nyim ngan-ga-nginy*
rna-water submerge 3SG>1SG-AUX-PST
'Water covered/submerged me'

Although there might be paradigmatic arguments to label *rna-* as nominative in (2a) but as ergative in (2b), there is no actual differential case marking for Agents in Mangarayi.

[5] As can be seen in Table 2, case marking for the feminine class is very different from the two other classes. As this difference is not important for the analysis here, the feminine class is left out of the discussion.

[6] Given these data it is possible that the Mangarayi case system could be more aptly described in terms of an ergative system with optional ergative marking for intransitive Subjects (cf. McGregor's (2007) discussion of ergative marking on intransitive Subjects in Warrwa).

2.1.2. Hittite

A second example of a language that has been claimed to show animacy-related split ergativity is Hittite, along with its close relatives Luwian and Lycian (Garrett, 1990; Patri, 2007; Hoffner and Melchert, 2008). However, I do not consider Hittite as a language exhibiting DAM governed by animacy because the split is actually a matter of grammatical gender, which is not quite the same as animacy. Neuter nouns have a distinct ergative marker that is not used with masculines and feminines, but this does not imply that all inanimates have overt ergative marking, as opposed to all animates. Whereas the Mangarayi noun class system is entirely based on animacy, the same does not hold for Hittite. Hittite genders are syntactic categories (Patri, 2007:27) and noun gender is not entirely predictable on semantic grounds (Luraghi p.c.). Whereas nouns like "tablet", "fire" or "blood" are neuter, other inanimate nouns like "pebble", "wind" or "message" are not (Garrett, 1990:266, 271). Moreover, the gender of a noun can be changed by certain derivational affixes (Patri, 2007:22). As a result, Hittite DAM cannot be captured in terms of animacy.[7]

2.1.3. Lakhota

Another potential candidate to be included in this category is Lakhota, a language which has been claimed by Aissen (2003:473) to exhibit DAM with zero marking for animate Agents and overt marking for inanimate ones. Lakhota is a head-marking language which normally leaves all Agents unmarked. In example (3a), however, the NP "rocks" is marked by the instrumental postposition *ų*, whereas zero marking is impossible (3b) (Van Valin, 1985:366–367):

LAKHOTA (Van Valin, 1985:367)

(3) a. *ix^{ʔ}é ki hená ų hokšíla wą a-ø-ø-phé*
rock the those INS boy a STEM-3SG.O-3SG.A-hit
'Those rocks (INST) hit a boy'

b. * *ix^{ʔ}é ki hená hokšíla wą a-ø-ø-phé*
rock the those boy a STEM-3SG.O-3SG.A-hit
'Those rocks hit a boy'

On the basis of this example, Lakhota appears to be a clear case of DAM governed by animacy, but again this analysis is not unproblematic. Whereas Aissen (2003) considers the NP "those rocks" in (3a) as a true Agent, i.e. a core argument marked by INST instead of Ø, this analysis is rejected by Van Valin (p.c.) and Pustet (p.c.). According to them, the only acceptable reading of (3a) is "He/She hit the boy with those rocks", with "rocks" as an ordinary adjunct NP marked by the instrumental.[8] Their informants insist that the rocks are manipulated by a human Agent, and cannot be interpreted as the Agent of the clause. Moreover, there are no examples where an inanimate force, for which human manipulation is semantically impossible, is marked by the instrumental. According to Pustet (p.c.), inanimate forces generally do not occur as Agents; even if they do occur (as argued by Van Valin, 1985:367), they are marked as zero and not as instrumental. To sum up, instrumentally marked inanimates only occur in clauses where they should not be analyzed as Agents, but as the instrument of an implied human manipulator. Therefore, Lakhota should be analyzed as a language where inanimate Agents are impossible (hence the ungrammaticality of (3b)) or strongly discouraged, instead of an example of animacy-driven DAM (see further below in section 2.4).

So far, I have argued that there is no clear evidence for animacy-related DAM with zero marking for animate Agents and overt marking for inanimate Agents (Ø vs ERG) in the languages discussed above. Moreover, there is no other language in my sample which has indications for this phenomenon.[9] There are, however, a number of so-called "optional ergative" languages (see McGregor, 2010) in my sample where animacy is one, but not the only, feature governing the use of the ergative marker. In these languages, ergative marking is obligatory for inanimates whereas it is optional for animates, i.e. the same NP can be either ergative-marked or zero-marked (Ø/ERG vs ERG). This optionality, however, is not just a matter free variation; the use or non-use of the ergative marker can be determined by a number of different principles. In Gooniyandi and Warrwa, optional ergative marking is motivated by the features of unexpected agentivity and discourse unexpectedness (McGregor, 1992, 1998, 2006). For Fore, the relevant feature of "contrastive focus" (as described by Donohue and Donohue, 1998:85)[10] resembles McGregor's (2006) feature of discourse unexpectedness. In Umpithamu (Verstraete, 2010) and Waskia (Ross and Paol, 1978:36–38), on the other hand, optional ergativity is motivated by a more local principle of focus, instead of one that is related to more global aspects of discourse organization. A rather different system is found in Nepali, which has a

[7] A reviewer noted that many DOM patterns, too, involve gender rather than animacy. It is indeed possible to consider the Hittite case system as a non-canonical instance of animacy-related DAM. However, the caveat that syntactic gender is not the same as animacy still holds. Furthermore, it is remarkable that canonical instances of this type of DAM are very difficult to find, as argued in this paper. For DOM, by contrast, the same does not hold.

[8] Note that verbal agreement cannot be invoked as evidence here. Cross-referencing for third singular Agent or Object is always zero, as well as for all inanimates, plural or singular. The zero on the verb in (3a) could thus refer to an inanimate plural Agent, as well as an implied human Agent.

[9] The only other possible example is Kwaza, a language isolate spoken in Brazil. Although this language has thus far not been analyzed as having a split ergative case system, van der Voort's (2004) grammar has two examples which seem to have an instrumentally marked inanimate Agent (see pp. 122–123). These examples are, however, not unequivocal and the overall evidence is too meagre to label the Kwaza case system as split ergative (Van der Voort, p.c.).

[10] According to Scott (1978), the use of the ergative marker in Fore depends on the relative animacy of Agent and Object: the ergative case marker is used when the Agent is equal to or lower than the Object in animacy. On the basis of a close examination of the ergative marker in Fore texts, Donohue and Donohue (1998) argue that this approach is not in line with the data. Instead, their account is based on the features of animacy and contrastive focus.

split case system in that ergative marking is obligatory for inanimates, but restricted to the past tense for animates (i.e. a combination of a tense/aspect split and an animacy split). All these languages thus have obligatory ergative marking for inanimates, whereas the principles governing ergative marking for animates vary. The only recurring feature seems to be something along the lines of "focality" (see also McGregor (2010:1619) and Malchukov (2008:215)), but the exact definition of this concept varies from language to language.

In this section, I have shown that there are no clear attestations of a language with zero marking for all animate Agents and ergative marking for all inanimate Agents (Ø vs ERG). There are, however, a number of "optional ergative" languages where animacy does play a role in DAM, albeit in combination with some other feature. This results in a case system where ergative marking is used on all inanimates, but only on some animates (Ø/ERG vs ERG).

2.2. ERG_1 vs ERG_2

The second category of DAM phenomena consists of languages where the difference between animate and inanimate Agents is not coded as a contrast between zero and overt case marking, but as one between two different overt cases. In most instances found in the sample, animate Agents receive ergative case marking whereas inanimate ones are marked by the instrumental. In the Australian languages Jingulu (Pensalfini, 2003:189–191) and Kuku Yalanji (Patz, 2002:123–131), the instrumental is used instead of the ergative when the Agent is an inanimate (see also Fauconnier and Verstraete, 2010). Compare (4a), where the human Agent has ergative marking, with (4b) and (4c), where the inanimate Agent has instrumental case. Note that it is not possible in this case to analyze the inanimate Agent as an adjunct, i.e. an instrument manipulated by an implicit human Agent. Inanimate Agents in Jingulu are clearly arguments since they are cross-referenced on the verb (4b).[11] Moreover, instrumentally marked inanimates occur in clauses where the involvement of a human manipulator is impossible (4b and 4c). A similar situation is found in Tsakhur (Kibrik, 2003:89) and in Samoan (Mosel and Hovdhaugen, 1992:424ff; Cook, 1996:65). There is also one language where the "inanimate" ergative marker does not seem to have any other oblique (e.g. instrumental) functions, namely Nêlêmwa (Bril, 2002) (see example (5)).

Jingulu (Pensalfini, 2003:178,189)

(4) a. *Babi-rni ikiya-rnarna-nu ibilkini.*
older.brother-ERG wet-3SG>1SG-PST water
'My brother wet me'

b. *Darrangku-warndi maya-ngarna-nu.*
tree-INS hit-3SG>1SG-PST
'A tree hit me [contextually: "I ran into a tree"]'

c. *Ngarrini-rni lilirni jujum-arndi maya-ø-nu*
1SG-GEN aunt lightning-INST hit-3SG>3SG-PST
'My aunt was struck by lightning'

Nêlêmwa (Bril, 2002:158,136)

(5) a. *kio i khuxi a Pwayili*
NEG 3SG eat.TR ERG.AN Pwayili
'Pwayili didn't eat it'

b. *taxa daan ru wi*
dig road ERG.INAN water
'The water made holes in the road'

Note that, although the instrumental case marker is sometimes used to mark inanimate Agents, there is no possible confusion with the Instrument role. The instrumental marks inanimate Agents in cases where the involvement of a human manipulator is impossible, e.g. example (4c).

2.3. OBL_1 vs OBL_2 in passives

The third category to be discussed here consists of languages which exhibit DAM in passive clauses. This type of DAM, too, seems to be more widely represented cross-linguistically than the first type (which involved a contrast between Ø and ERG). In most cases, demoted inanimate Agents have instrumental case marking whereas animate ones are marked by some other

[11] In Jingulu, verbal cross-reference is zero when a third singular Agent acts on a third singular Object. This explains why there is no overt cross-reference marker in example (4c).

oblique case. This is illustrated by the following example from Ainu. Whereas the demoted animate Agent in (6a) is marked by the ablative postposition, the demoted inanimate Agent in (6b) has instrumental marking.[12]

Ainu (Bugaeva, 2009:6–7)

(6) a. *hapo oro wa a=en=koyki*
mother ABL INDF.A=1sg.O=abuse
'I was scolded by (my) mother'

b. *rera ani cikuni, a=ø=kekke wa*
wind INS tree INDF.A=3.O=break and
'The tree was broken by the wind'

Other languages exhibiting this phenomenon include Evenki (Nedjalkov, 1997:218–219), Hup (Epps, 2008:169, 190), Maltese (Borg and Azzopardi-Alexander, 1997:146), Mundari (Cook, 1965:238), Turkish (Göksel and Kerslake, 2005:149–150), De'kwana (Hall, 1988:172), Kayardild (Evans, 1995:349–351) and Nepali (Pokharel, 1996:465–466).

2.4. Restrictions on the use of inanimate Agents

Apart from the three types of animacy-driven DAM discussed above, there is another phenomenon related to animacy that is relevant in this context. In some languages, only animate referents are allowed to occur as Agents, i.e. transitive clauses with an inanimate Agent are impossible.[13] In Kiowa (Watkins, 1984:111–112), for instance, a clause like "the ice broke it" is ungrammatical (7a); speakers can use two intransitive coordinate clauses instead ("The ice$_i$ was heavy and it$_j$ broke", example (7b)).

Kiowa (Watkins, 1984:112)

(7) a. * *tɛ̃́-gyà é-t^{h}êm*
ice 3SG.A.INV.O-break.PRF
'The ice broke it'

b. *tɛ̃́-gyà ø-p^{h}ɪ́́ nɔ̀ ɔ́yhɔ̀dè è-t^{h}êm-gyá*
ice 3SG-heavy and that 3.INV-break-INTR.PRF
'The ice$_i$ was heavy and that's why it$_j$ broke'

This restriction on the use of inanimate Agents is also found in Tlapanec (Wichmann, 2007:806, p.c.), Assiniboine (Cumberland, 2005:184, 424), Halkomelem (Gerdts, 1988:26–27), Matses (Fleck, 2003:831), Koyukon (Axelrod, 1990:184–187), Jakaltek (Craig, 1977:73–75), Japanese (Kuno, 1973:31), Belhare (Bickel, 2004:165, p.c.), San Miguel Chimalapa Zoque (Johnson, 2000:20,114) and Lakhota (see above; Pustet p.c., Van Valin p.c.).

Furthermore, there are also languages where the restriction does not hold for all inanimates, but only for a semantically well-defined subset. In this case, inanimate Agents are only allowed when they are construed as autonomously acting entities, i.e. independent instigators which have not been manipulated by an implied animate controller. This obviously includes all natural forces (e.g. floods, wind, lightning), which always act independently. In some languages, however, inanimate objects can also be construed as independent instigators, in cases of spontaneous occurrences where no human intervention is involved (e.g. a branch of a tree suddenly breaking off and hitting someone's head). This notion of independent instigation is illustrated by the following examples from Hare (DeLancey, 1984).

Hare (DeLancey, 1984:186–187)

(8) a. *John yejai tá'enɨse*
John glass break.PST
'John broke the window'

b. *'idikóne' ye-wéhxɨ*
lightning 3.O-kill.PST
'Lightning killed him'

c. * *gofɨ* yejai *tá'enɨse*
axe glass break.PST
'The axe broke the window'

[12] Here, too, the inanimate Agent cannot be interpreted as a canonical instrument because inanimates can have instrumental case marking even when external manipulation is impossible. In (6b), the Agent "wind" is a natural force, which excludes the involvement of an implicit human Agent.

[13] This phenomenon was also noted by Dahl and Fraurud (1996:49) and de Swart et al. (2008:132), but as far as I am aware it has never been examined closely.

d. *féku ye-wéhxį*
gun 3.O-kill.PST
'The gun killed him' (= it went off spontaneously)

(8a) and (8b) are grammatical transitive clauses with an independently acting Agent (a human and a natural force, respectively). (8c), on the other hand, is ungrammatical because the inanimate Agent "axe" cannot have broken the window by itself: axes generally do not have the ability to move without human manipulation. The same principle explains why the grammaticality of (8d) depends on the context. If the gun goes off spontaneously, the clause is grammatical because its Agent is construed as an independent instigator. If, however, the gun is fired by somebody, the clause is ungrammatical because it does not have an autonomously acting Agent. To sum up, the relevant semantic notion is not animacy in the strict sense, but the related concept of independent instigation: inanimate Agents are only allowed when they are independent instigators (see Fig. 2). Other languages which exhibit this phenomenon include Khmu (Svantesson, 1983:103–104), Fongbe (Lefebvre and Brousseau, 2002:270–273), Hausa (Heide, 1989:60–61), Shipibo-Konibo (Valenzuela, 2003:648), Kokota (Palmer, 1999:159), Yuchi (Linn, 2001:162–163), Semelai (Kruspe, 2004:158) and Hindi (Mohanan, 1994:74–75).

Of course, there are also languages where the avoidance of inanimate Agents is not so strict, i.e. inanimate Agents are in principle allowed, but they tend to be avoided. This is the case, for instance, in Koyra Chiini (Heath, 1999:128) and Yimas (Foley, 1991:203–204). Although this phenomenon is not frequently mentioned explicitly in grammars, it is probably very common.

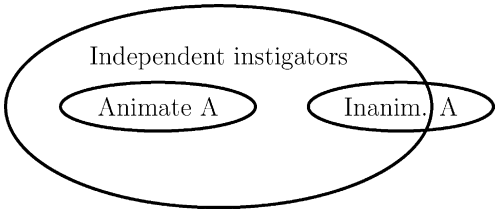

Fig. 2. Independent instigation and animacy.

3. Animacy-related DAM: a functional account

In the previous section I have discussed the cross-linguistic occurrence of three different types of animacy-driven DAM. I have shown that there are no clear-cut attestations for the first category (Ø vs ERG). There is, however, a small number of languages with optional ergative marking for animates and obligatory ergative marking for inanimates (i.e. Ø/ERG vs ERG). Furthermore, the second (ERG_1 vs ERG_2) and third (OBL_1 vs OBL_2 in passives) categories are represented in my sample by a relatively small number of languages, too. This implies that animacy-driven DAM is typologically much less common than animacy-driven DOM. In this section I will argue that these findings are not easily accounted for under the existing approaches to differential case marking. Therefore, I will propose an alternative approach which avoids these problems.

3.1. Problems with earlier accounts

In my opinion, earlier approaches cannot satisfyingly account for the three categories of DAM that were found in my cross-linguistic sample. Concerning the first category (Ø vs ERG), the markedness approach predicts case systems with zero marking for animate Agents and overt ergative marking for inanimate Agents, whereas such case systems are not attested in my sample. Moreover, the data on optional ergative systems (Ø/ERG vs ERG), where animacy is not the only feature involved in overt ergative marking, are not entirely in line with the predictions, either. According to the markedness approach, the second feature involved in DAM is definiteness: low-prominent, i.e. indefinite and inanimate Agents should receive ergative marking. The observed pattern of overt ergative marking of focal Agents, however, is different from overt ergative marking of low-prominent, indefinite Agents. In the languages discussed above, focal Agents can be either definite or indefinite, and they are very often high instead of low in prominence.

Concerning Malchukov's (2008) approach to the first type of DAM, more or less the same problems hold. In his opinion, the differentiating function of case marking (referred to as DIFF) predicts overt marking of inanimate Agents as opposed to animate ones, i.e. Ø vs ERG. This type of DAM, however, is less frequent than expected because there are other disambiguating strategies available, like the use of agreement markers or word order. This might be true, but it does not explain the big difference in frequency between DAM and DOM. Why are these alternative strategies preferred over DAM, but not (or much less so) over DOM? After all, word order and agreement are available for disambiguation in the case of atypical Agents as well as in the case of atypical Objects.

Another approach that is relevant for the first type of DAM is found in Næss (2007). Næss (2007:179–182) argues that inanimates are more likely to receive overt ergative case marking because they are not inherently capable of volition and instigation, two features which define Agents. Although this is a plausible explanation, it predicts a case system that is not attested, or at least very uncommon in my sample, i.e. with zero marking for animate Agents and ergative marking for

inanimate Agents. Næss (2007:179–180) does note that split ergative systems do not usually have a split between animate and inanimate Agents, but rather between nouns and pronouns, or between 1nd/2nd person and 3rd person, but she considers this as a grammaticalization of the animate–inanimate distinction. This is somewhat problematic, however, because it is not clear how a distinction between animates and inanimates, based on the features of volition and instigation, could develop into a distinction between speech act participants (SAP) and non-SAP, or between nouns and pronouns. Moreover, it is also unclear why animacy is more relevant for DOM than for DAM. According to Næss (2007:179), split accusativity is often governed by animacy, whereas split ergativity is not. Why is the process of grammaticalization much less common for DOM than for DAM?

Secondly, earlier approaches are also problematic with respect to the second and third types of DAM (ERG_1 vs ERG_2 and OBL_1 vs OBL_2 in passives). The markedness approach cannot account for these phenomena since they involve alternations between two overt cases and not between zero and overt marking. Malchukov's (2008) approach, by contrast, uses the indexing function of case marking (referred to as INDEX) to account for these cases: since the ergative case marker marks "true" Agents only, it is not used in cases of low agentivity. This feature correlates indirectly with animacy, since agentivity presupposes animacy. As a result, only highly agentive, animate Agents receive ergative marking, whereas this is not the case for inanimate Agents. It seems that a similar reasoning can be used to account for DAM in passives (third category), although Malchukov (2008) does not mention the possibility. Still, there are some problems with this analysis. First, if the non-use of the ergative case marker is a matter of low agentivity, it should be expected that this does not just hold for inanimates, but also for other Agents low in agentivity, like unintentional human Agents. However, the examples of DAM discussed above are all limited to inanimate Agents; unintentional Agents do not trigger DAM in these languages. One can thus ask why it is necessary to invoke the broader feature of agentivity, which only indirectly correlates with animacy, when the phenomenon under discussion is sensitive to animacy only.[14] Second, it is not clear why INDEX does not leave inanimate Agents simply unmarked. Inanimate Agents are too low in agentivity to receive ergative marking, but why are they marked by another case instead of Ø? It thus seems that an analysis in terms of agentivity does not work very well for the second and third categories. This becomes especially obvious when one compares these languages with a language where agentivity does play a role. In Abui, the free pronoun *di*, which co-indexes NPs on the verb, seems to be a true marker of agentivity. It marks all agentive S and A arguments, whereas inert inanimates and unintentional animates are unmarked (Kratochvíl, 2007). In this case, the two objections raised above do not hold, and an analysis in terms of agentivity seems appropriate. There is, however, no reason to extend it to other languages which exhibit very different patterns.

3.2. An alternative account based on the notion of unexpectedness

Because of the problems associated with earlier accounts, I propose an alternative approach which avoids these disadvantages. In order to account for my findings concerning animacy-driven DAM, I will use the notion of "unexpectedness". Under this approach, inanimates are unexpected to occur as Agents. This unexpectedness can have two possible results. First, languages can use DAM to mark inanimate Agents as unexpected. Second, languages can strongly disprefer the occurrence of inanimate Agents, or even restrict it. This approach thus has the advantage that it not only accounts for languages with DAM, but also for languages with restrictions on the use of inanimate Agents.

The idea that inanimates are unexpected as Agents is already present in Silverstein (1976), who states that inanimates are the "least natural" Agents. Moreover, McGregor (2006:407) and Verstraete (2010:1647) use the concept of unexpectedness to explain overt ergative marking of inanimate Agents. The precise semantic basis of this unexpectedness is never made explicit, however. In what follows, I will examine which features of Agent semantics are involved: why exactly are inanimates not generally expected to be construed as the Agent of a clause? Of course, there is much debate on the features that are essential to define Agent semantics (see e.g. Fillmore, 1968; DeLancey, 1984; Dowty, 1991; Langacker, 1991; Van Valin and Wilkins, 1996; Næss, 2007). Here, I will use the minimal definition of the transitive Agent: an Agent is the instigator of an action that affects an Object. This definition can be broken down into two parameters: first, Agents are instigators and second, Agents are affectors. I argue that the association between inanimates and these two features is unexpected.

First, the concept of "instigation", which is also used by Næss (2007:180–182) in her account of DAM, presupposes an ability to act independently. Of course, all animates have an internal source of energy and are thus unproblematic as autonomous instigators of an action. For inanimates, however, the situation is more complex. As argued in section 2.4, one has to make a distinction between inert inanimate objects which are only involved in an action through external manipulation, and "independent instigators" which can, or are perceived to, instigate actions of their own accord, i.e. without human intervention. Put in DeLancey's (1984) terms, they are the "ultimate cause" of the event. There is thus a difference between "true" instigators and inert inanimates which cannot truly instigate an action (see also Van Valin and Wilkins, 1996, who use the term of "motive" inanimates, as opposed to non-motive ones). This last category, then, is unexpected to be associated with the Agent role because their semantics are in conflict with the parameter of instigation.

Second, the concept of "affecting an Object" implies that an Agent is, through the action it instigates, responsible for a change of state within an Object. Put differently, an Agent is not only the ultimate cause or initiator of an action, but also the ultimate affector of an Object (see also Næss, 2007:166). On a strict semantic basis, there are no categories which are unexpected for this role. In the anthropocentric world view, however, there are certain expectation patterns concerning

[14] Of course the same holds for accounts where inanimate Agents receive special marking because they are low in volitional control, e.g. Næss (2004).

who/what acts upon who/what.[15] The normal, expected course of events is for humans to affect and change their environment, and not vice versa. This implies that inanimates are expected to be the affected, and not the affecting entity in an event. Inanimates are thus unexpected in the role of affector, not because of their inherent semantic features, but because of human expectation patterns concerning the "normal" course of events.

The two parameters of "instigator" and "affector" thus make different predictions with respect to which entities are unexpected to occur as Agents.[16] According to the parameter of "instigator", inert objects, i.e. a subset of the category of inanimates, are unexpected as Agents. According to the parameter of "affector", however, all inanimates are unexpected as Agents. It is the combination of these two parameters which allows one to account for the phenomena described in the previous section. First, when an entity is unexpected to occur as an Agent, the most intuitive strategy seems to avoid construing it as such. This results in a strong preference for animate Agents (as was noted for Koyra Chiini and Yimas), or even a restriction against inanimate Agents. In cases where the parameter of "instigator" is the most important one, only a subset of inanimate Agents (namely inert inanimate Agents) are prohibited, whereas the restriction holds for all inanimates in languages where the parameter of "affector" is more important. The unexpectedness account thus explains why some languages have a restriction against those inanimate Agents which do not act independently (e.g. Hare), whereas other languages do not allow inanimate Agents at all (e.g. Kiowa).

Second, the unexpectedness approach can also account for animacy-driven DAM: languages use a special case in order to mark Agents as unexpected. In languages from the second category (ERG_1 vs ERG_2, e.g. Jingulu), inanimate Agents are thus not ergative-marked, since this is the standard case for all Agents. Instead, inanimate Agents receive special case marking in order to set them apart. A similar reasoning can be used for languages from the third category (OBL_1 vs OBL_2 in passives, e.g. Ainu). Although most languages seem to be sensitive to the parameter of "affection" (i.e. all inanimate Agents receive special marking), there are also languages where "instigation" is more important: in Samoan (Cook, 1996; Mosel and Hovdhaugen, 1992) and Kuku Yalanji (Patz, 2002; Fauconnier and Verstraete, 2010), special ergative marking only applies to inert inanimate objects, whereas independent instigators are ergative-marked.

Third, it seems that this approach in terms of unexpectedness can also be extended to account for a number of languages with optional ergative marking for animates but obligatory ergative marking of inanimate Agents (i.e. Ø/ERG vs ERG). In these cases, the concept of unexpectedness is not restricted to inanimates; animate Agents can also be considered as unexpected in certain contexts. As a result, the ergative case is obligatorily used with inanimates, which are always unexpected in line with the account outlined above, but it only appears on those animates which are unexpected as Agents. The precise definition of an unexpected animate Agent depends from language to language. In Warrwa (McGregor, 2006) and Fore (Donohue and Donohue, 1998), animate Agents are unexpected when their identity is surprising in discourse. In languages like Umpithamu (Verstraete, 2010) and Waskia (Ross and Paol, 1978), however, it is the association between the Agent role and the category of focal arguments that is considered as unexpected. This might be explained on the basis of the fact that Agents are only rarely focal (Du Bois, 1987): since Agents are generally topics, the occurrence of a focal argument in the Agent role is surprising.[17]

Fourth, the approach advocated here can also account for the relative scarcity of DAM effects, since there is another strategy available to deal with the unexpectedness of inanimate Agents, namely simply avoiding, or even prohibiting them (see above). As inanimates are unexpected to occur as Agents, it is indeed the most intuitive strategy to avoid construing them as such. Put differently, the unexpectedness of inanimate Agents is more likely to have an effect on the selection of specific types of arguments as Agents than on Agent case marking.

4. Broader implications

In the previous sections I have presented the data gathered from my sample and I have proposed an approach to account for my findings. In this section, I will discuss the results from a broader theoretical perspective. First, I will argue that the data and the analysis proposed in this paper suggest both symmetries and asymmetries between the Agent role and the Object role. Second, I will discuss the implications of my data for the Silverstein hierarchy.

4.1. Symmetries and asymmetries between Agents and Objects

Various approaches to differential case marking assume that Agents and Objects have opposite features, i.e. they are each other's mirror image: the typical Agent is animate whereas the typical Object is inanimate (see e.g. Aissen, 2003; Comrie, 1989). The data and the analysis presented in this paper, however, suggest that this analysis is not entirely appropriate. In the previous section it was argued that Agent semantics are such that they are not readily compatible with inanimates. This implies that the Agent role is restricted with respect to the types of NPs it can be associated with. This is not only evident from the fact that there are languages which do not allow inanimates to be construed as Agents; in languages where

[15] See for instance Navajo (Witherspoon, 1977) for an example of a language with an elaborate hierarchy ranking potential affectors.

[16] A reviewer pointed out that the feature of "instigator" might also apply to agentive intransitive Subjects, unlike the feature of "affector". This is an interesting observation and it might be useful for typological investigation of DSM, but a thorough discussion of this issue would fall outside the scope of this paper.

[17] This approach is somewhat similar to Malchukov's (2008). He attributes the overt marking of focal Agents to DIFF, since focal arguments "are more likely to be construed as objects than as (transitive) subjects" (Malchukov, 2008:216).

inanimate Agents are allowed their frequency is often very low.[18] The Object role, by contrast, does not seem to be restricted by nature. The semantic property which defines Objects is affectedness (see e.g. Fillmore, 1977; Hopper and Thompson, 1980; Dixon, 1994; Næss, 2004), which is compatible with any type of NP: an entity does not need to be (in)animate or (in) definite in order to be affected (see also Næss, 2007:180). There are of course differences in frequency between pronominal, animate and inanimate Objects, as well as different degrees of affectedness (see Næss, 2004), but Object semantics do not exclude or disfavor certain types of NPs, unlike Agent semantics. The data and the analysis discussed in this paper thus favor a linguistic model where Agents and Objects are not simply each other's mirror image: Agent is a restricted role, whereas this is not the case for Object (see also de Swart, 2007:94–95).

Although Agents and Objects do not exactly mirror each other with respect to the types of NPs they can be associated with, they can still be regarded as each other's opposites in terms of the semantic properties which define both notions (see also Næss, 2007; Primus, 1999). In section 3.2, I argued that the Agent-property "affector" can be used to explain DAM. This notion of "affector" is semantically opposite to the Object-property "affectedness", which was used by Næss (2004) to account for DOM. In this sense, my account of DAM is symmetrical to, and complementary with, Næss's account of DOM. In order to explain differential case marking, both accounts depart from the semantic properties defining Agents and Objects, and not from the types of NPs they are typically associated with. Although the properties "affector" and "affectedness" are each other's opposites, the semantic symmetry between Agents and Objects is not perfect. As argued above, Agents are not only affectors, they are also instigators of an action, and this notion of instigation is needed to explain some cases of DAM-related phenomena. There is thus an additional semantic property that characterizes Agents. Since the notion of "instigation" does not have an Object-oriented counterpart, this implies that the Agent role is semantically more complex than the Object role.

The symmetries and asymmetries between Agents and Objects discussed in this section are captured in Table 3. With respect to semantic properties, Agents are both affectors and instigators. Objects, on the other hand, are only affected, a property which is opposite to affector. For Agents, these semantic properties lead to a preference for animate Agent NPs. For Objects, by contrast, a similar preference does not exist.

Table 3
Symmetries and asymmetries between Agents and Objects.

	Agent		Object
Semantic properties	affector instigator	⟷	affected
⇓			
Preferred NPs	+animate		±animate

4.2. The Silverstein hierarchy

The Silverstein hierarchy, which was briefly discussed in section 2.1 (see also Fig. 1), can account for various phenomena relating to argument marking that are found in my sample. It correctly predicts that split ergative languages have accusative patterning (NOM for A and S, ACC for O) for higher-ranking referents but ergative patterning for lower-ranking referents (ERG for A, ABS for S and O). Languages such as Kham (Watters, 2002) and Nez Perce (Rude, 1985) thus have nominative-accusative marking for 1st person and 2nd person, but ergative-absolutive marking for 3rd person pronouns and nouns. Moreover, the Silverstein hierarchy can also account for argument marking in languages with a direct/inverse system, such as Arizona Tewa (Klaiman, 1993), Movima (Haude, 2006, 2009) and Shawnee (Berardo, 2001). In these languages, direct marking is used when A ranks higher than O on the hierarchy, whereas inverse marking is used when A ranks lower than O.[19] The data presented in this paper, however, show that there are also phenomena which are less easily accounted for by the Silverstein hierarchy. As case marking splits can, in principle, occur anywhere along the hierarchy (Silverstein, 1976:122), it is not clear why some types of splits are more common than other ones. As argued in section 2, case marking splits between animate and inanimate Agents are uncommon,[20] whereas splits between animate and inanimate Objects (= DOM) are very widespread (see also Næss, 2007:179–180).[21] The Silverstein hierarchy cannot account for this observation because it suffers from the same problem discussed above: it represents the naturalness of NPs in both A and O function on one single hierarchy, and thus assumes a mirror-image model where A and O are each other's exact opposites. This implies that it

[18] For spoken Swedish, for instance, Dahl (2000:45) reports that only 6.8% of transitive subjects are inanimate.
[19] Similarly, the relative ranking of A and O on the Silverstein hierarchy also explains the "global" case marking patterns found in languages such as Folopa (Anderson and Wade, 1988), where the ergative case is obligatorily used when A is lower than or equal to O in animacy.
[20] In this respect, my sample-based data corroborate DeLancey's (1981:645) remark that only "higher" ergative splits (i.e. speech act participant (SAP) vs non-SAP and pronouns versus nouns) are widely attested, whereas other types of splits are very rare.
[21] A reviewer remarked that "pure" instances of animacy-based DOM might be less common than often thought, since all more thoroughly investigated languages turn out to show effects of other factors as well. Nevertheless, I think it is striking that DOM systems where animacy is the predominant factor are common and very easy to find, whereas the same is not true for DAM.

cannot capture the differences between the Agent role and the Object role. A second phenomenon that cannot be explained by the Silverstein hierarchy is the importance of the semantic distinction between independently and dependently acting inanimates. As argued in sections 2.4 and 3.2, this distinction explains both DAM and the restrictions on the use of inanimate Agents in a number of languages. This distinction, however, cannot be integrated in the hierarchy because it is only relevant for Agents, and not for Objects. Here, too, the mirror-image model makes it difficult to capture the differences between Agents and Objects. Moreover, the mirror-image model is also problematic with respect to a third phenomenon discussed in this paper, namely the differential marking for focal Agents. Although the discussion in section 2 was limited to systems where both focality and animacy play a role, there are also languages in the sample where DAM is sensitive to focality only, e.g. Ika (Frank, 1985:149–154; Tracy and Levinsohn, 1977); see also Malchukov (2008). Focality is thus a feature that can play a role in DAM, but again the difference between focal and non-focal arguments cannot be integrated in the Silverstein hierarchy because it is only relevant for Agents.[22] Given these problems with the Silverstein hierarchy, one could wonder if it would not be better to split up the hierarchy into two separate hierarchies, one for Agents and one for Objects (see e.g. the Agent hierarchy in Van Valin and Wilkins, 1996:314–315). As an alternative, the Silverstein hierarchy can be maintained as is if it is taken to represent rough tendencies of case marking, instead of precise distributions.

5. Conclusions

In this paper, I have investigated the phenomenon of animacy-driven Differential Agent Marking on the basis of a cross-linguistic sample. I have distinguished three types of DAM, all of which are relatively uncommon, especially when compared with DOM. Aside from DAM, I have also discussed a related cross-linguistic phenomenon where a language has restrictions on the use of inanimate Agents. Furthermore, I have argued that these findings cannot be easily explained under existing approaches to differential case marking. As an alternative, I have proposed an account based on the notion of unexpectedness. Under this approach, inanimates are unexpected to occur as Agents because their semantics are not readily associated with the Agent-properties of ''instigating an action'' and ''affecting a Patient''. I have argued that the effects of this unexpectedness can be situated on two different levels. The first type of effect is situated on the level of Agent selection: since inanimates are unexpected to occur as Agents, the preferred strategy is to avoid or restrict them. The second type of effect is situated on the level of Agent case marking: inanimate Agents can receive a special case marker that is not used with animate Agents. This strategy, however, is not often preferred over the first one, which explains why DAM is an uncommon phenomenon. Finally, I have discussed the results of this paper from a broader theoretical perspective. I have argued that the Agent role is semantically more restricted than the Object role, and that Agents and Objects are thus not simply each other's mirror image. Moreover, I have also discussed a number of problems that are related to the Silverstein hierarchy and I have argued that it is not possible to account for the different varieties of differential case marking using a single, unified hierarchy for both Agents and Objects.

Of course, this paper could not cover all the features that can cross-linguistically be involved in DAM. One of the features that could be interesting for further research is intentionality, which was briefly touched upon in section 3.1. Both unintentional human Agents and inanimate Agents are low in volitionality, but, as shown by Kittilä (2005), this does not entail that intentionality and animacy have the same effect on DAM. While there is some published work on intentionality and DAM/DSM (see e.g. Kittilä, 2005; de Hoop and Malchukov, 2007), a broad cross-linguistic survey of the effects of intentionality on case marking could probably offer many interesting insights. A second feature that was only partly discussed in this paper is focality. As argued in section 2.1, focality is often a second feature, aside from animacy, that is involved in DAM. Since the focus of this paper is on animacy, I did not discuss languages such as Ika (Tracy and Levinsohn, 1977; Frank, 1985) where focality is the only feature involved in DAM. Again, there are some papers on this subject (see e.g. Malchukov, 2008; McGregor and Verstraete, 2010), but a sample-based cross-linguistic investigation could add much to our knowledge of this phenomenon.

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[22] As pointed out in section 3.1, the distinction between definite and indefinite arguments, which is relevant for DOM, is not the same as the distinction between focal and non-focal arguments.

Appendix A. 200-language set[23]

Abui (Kratochvíl, 2007); Abzakh (Paris, 1989); Acehnese (Durie, 1985); Adang (Haan, 2001); Agul (Ganenkov et al., 2008); Ainu (Bugaeva, 2009); Alamblak (Bruce, 1984); Aleut (Bergsland, 1997); Amele (Roberts, 1987); Amis (Joy Wu, 2006); Arizona Tewa (Kroskrity, 1977; Klaiman, 1993); Assiniboine (Cumberland, 2005); Basque (Hualde and de Urbina, 2003); Begak (Goudswaard, 2005); Belhare (Bickel, 2004); Betta Kurumba (Coelho, 2003); Biak (van den Heuvel, 2006); Bororo (Crowell, 1979); Burmese (Soe, 1999); Burushaski (Munshi, 2006); Cantonese (Matthews and Yip, 1994); Caviñena (Guillaume, 2004); Choctaw (Davies, 1981); Chukchi (Dunn, 1999); Coeur d'Alene (Doak, 1997); Comanche (Charney, 1989); Coptic (Layton, 2000); Cupeño (Hill, 2005); Dani (Lower Grand Valley) (Bromley, 1981); Darma (Willis, 2007); De'kwana (Hall, 1988); Degema (Kari, 2004); Dena'ina (Lovick, 2005); Dhaasanac (Tosco, 2001); Dhimal (King, 2007); Dime (Seyoum, 2008); Dimili (Todd, 1985); Dupaningan Agta (Robinson, 2008); East Dangla (Shay, 1999); Eastern Kayah Li (Solnit, 1997); Eton (van de Velde, 2008); Evenki (Nedjalkov, 1997); Folopa (Anderson and Wade, 1988); Fore (Scott, 1978; Donohue and Donohue, 1998); Fongbe (Lefebvre and Brousseau, 2002); Fur (Jakobi, 1990); Galo (Post, 2007); Georgian (Aronson, 1989; Hewitt, 1995); Gooniyandi (McGregor, 1992, 1998); Haida (Enrico, 2003); Halkomelem (Gerdts, 1988); Hare (DeLancey, 1984); Hausa (Heide, 1989); Hdi (Frajzyngier, 2002); Hindi (Mohanan, 1994); Hittite (Garrett, 1990; Patri, 2007; Hoffner and Melchert, 2008); Hua (Haiman, 1980); Hungarian (Szent-Iványi, 1995); Hup (Epps, 2008); Ika (Frank, 1985); Ilocano (Rubino, 1997); Iraqw (Mous, 1993); Iu Mien (Court, 1985); Jahai (Burenhult, 2005); Jakaltek (Craig, 1977); Jamsay (Heath, 2008); Jamul Tiipay (Miller, 2001); Japanese (Kuno, 1973); Jarawara (Dixon, 2005); Jingulu (Pensalfini, 2003); Kambera (Klamer, 1998); Kana (Ikoro, 1996); Karitiana (Storto, 1999); Kayardild (Evans, 1995); Ket (Vajda, 2004); Kham (Watters, 2002); Khmu (Svantesson, 1983); Khwarshi (Khalilova, 2009); Kiowa (Watkins, 1984); Kisi (Childs, 1995); Koasati (Kimball, 1985); Kokota (Palmer, 1999); Kolyma Yukaghir (Maslova, 2003); Korean (Sohn, 1999); Korowai (van Enk and de Vries, 1997); Koyra chiini (Heath, 1999); Koyukon (Axelrod, 1990); Krongo (Reh, 1985); Kuku Yalanji (Patz, 2002); Kusunda (Watters, 2006); Kuot (Lindström, 2002); Kwaza (van der Voort, 2004); Laguna Keres (Lachler, 2006); Lakhota (Van Valin, 1985); Lango (Noonan, 1992); Lao (Enfield, 2007); Lavukaleve (Terrill, 2003); Lele (Frajzyngier, 2001); Lezgian (Haspelmath, 1993); Lillooet (van Eijk, 1997); Limbu (van Driem, 1987); Logba (Dorvlo, 2008); Lunda (Kawasha, 2003); Ma'di (Blackings and Fabb, 2003); Maale (Amha, 2001); Malayalam (Asher and Kumari, 1997); Malayu ambong (Van Minde, 1997); Maltese (Borg and Azzopardi-Alexander, 1997); Mam (England, 1983); Mangarayi (Merlan, 1982); Mangghuer (Slater, 2003); Maori (Harlow, 2007); Mapuche (Smeets, 2008); Maricopa (Gordon, 1986); Matses (Fleck, 2003); Meithei (Chelliah, 1997; Bhat, 1991); Menggwa Dla (de Sousa, 2006); Menya (Whitehead, 2004); Mian (Fedden, 2007); Mina (Frajzyngier et al., 2005); Miya (Schuh, 1998); Modern Greek (Holton et al., 2006); Mosetén (Sakel, 2003); Movima (Haude, 2006); Mualang (Tjia, 2007); Muna (Van den Berg, 1989); Mundang (Elders, 1995); Mundari (Cook, 1965); Mupun (Frajzyngier, 1993); Murle (Arensen, 1982); Nama (Hagman, 1973); Nelemwa (Bril, 2002); Nepali (Pokharel, 1996); Nez Perce (Rude, 1985); Ngiti (Lojenga, 1994); Nicobarese (Braine, 1970); Nivkh (Shiraishi, 2006); Nootka (Davidson, 2002); North-East Ambae (Hyslop, 2001); Northern Paiute (Thornes, 2003); Nubi (Wellens, 2003); Nxa'amxcin (Willet, 2003); Pacoh (Alves, 2006); Päri (Andersen, 1988); Pipil (Campbell, 1985); Puyuma (Teng, 2008); Sabane (Antunes de Araujo, 2004); Samoan (Cook, 1996; Mosel and Hovdhaugen, 1992); San Miguel Chimalapa Zoque (Johnson, 2000); Sanuma (Borgman, 1990); Semelai (Kruspe, 2004); Shawnee (Berardo, 2001); Shipibo-Konibo (Valenzuela, 2003); Siberian Yupik Eskimo (de Reuse, 1994); South Efate (Thieberger, 2004); Sochiapan Chinantec (Foris, 2000); Spanish (Bosque and Demonte, 2000); Sre (Manley, 1971); Supyire (Carlson, 1994); Swedish (Holmes and Hinchliffe, 1994); Tamashek (Heath, 2005a); Tamil (Lehmann, 1989); Tapiete (González, 2005); Tariana (Aikhenvald, 2003) Tarma Quechua (Adelaar, 1977); Tauya (MacDonald, 1990); Tepehua (Watters, 1988); Thai (Noss, 1964); Thulung Rai (Lahaussois, 2002); Tidore (van Staden, 2000); Tiriyo (Meira, 1999); Tlapanec (Wichmann, 2007); Tondi Songway (Heath, 2005b); Trumai (Guirardello, 1999); Tsafiki (Dickinson, 2002); Tsakhur (Kibrik, 2003); Tshangla (Andvik, 1999); Tukang Besi (Donohue, 1999a); Turkana (Dimmendaal, 1982); Turkish (Göksel and Kerslake, 2005); Udihe (Nikolaeva and Tolskaya, 2001); Ulwa (Green, 1999); Umpithamu (Verstraete, 2009); Urarina (Olawsky, 2006); Vietnamese (Đ ính-Hoà, 1997); Wanano (Stenzel, 2004); Wansojot (Higuita, 2008); Wappo (Thompson et al., 2006); Waskia (Ross and Paol, 1978); Warao (Romero-Figueroa, 1997); Warembori (Donohue, 1999b); Warihio (Armendáriz, 2005); Warrwa (McGregor, 2006); West Greenlandic (Fortescue, 1984); Yaqui (Guerrero-Valenzuela, 2005); Yimas (Foley, 1991); Yuchi (Linn, 2001); Yurakaré (van Gijn, 2006); Zaar (Caron, 2005); Zaiwa (Lustig, 2002).

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